ABSTRACT OF THE DISCLOSURE

A method of identifying and measuring alternans in an electrocardiographic (ECG) signal representative of the electric activity of a heart of a patient. The ECG signals from the patient are divided into individual cardiac cycles and the amplitude of four segments of the repolarization portion and the depolarization portion of each cardiac cycle are measured. The amplitude for each of the repolarization segments are measured from a reference baseline that is determined by a first base segment occurring immediately prior to the repolarization portion of the present cardiac cycle and a second base segment occurring immediately before the depolarization portion of the next cardiac cycle in the sequence. Based upon the amplitude measurements over the repolarization and the depolarization portions of each cardiac cycle, digital signal processing is applied to the measurements to generate eigenvariables. A spectral density is calculated for each of the eigenvariables, which spectral densities can be used to determine both the presence of alternans and the respiratory frequency.